

Burnett (C. H.)

THE SURGICAL TREATMENT OF CHRONIC
TYMPANIC VERTIGO, OFTEN MISCALLED
MÉNIÈRE'S DISEASE.

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CHARLES H. BURNETT, M.D.,
AURAL SURGEON PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.



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**THE SURGICAL TREATMENT OF CHRONIC
TYMPANIC VERTIGO, OFTEN MISCALLED
MÉNIÈRE'S DISEASE.¹**

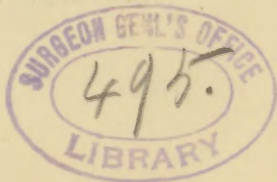
BY CHARLES H. BURNETT, M.D.,
AURAL SURGEON PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.

CHRONIC tympanic vertigo, the most frequent form of aural vertigo, is one of the results of chronic catarrhal otitis media. It is always found in connection with tinnitus aurium and deafness, still commoner results of chronic aural catarrh. Unfortunately, chronic tympanic vertigo usually receives the very unjust and inaccurate designation of Ménière's disease.

The latter term, if it means anything—and it has but a very slender title to the wide acceptance it has met with in medical nomenclature—means a form of aural vertigo due to disease of the semi-circular canals. Disease of these canals, however, is very rare, and difficult to diagnosticate.

The name "Ménière's disease" is *inaccurate*, because it is indiscriminately applied to all forms of aural vertigo, regardless of the seat of the otic lesion, whereas Ménière attempted to prove the existence of a disease of the semi-circular canals as the only cause of aural vertigo, an entirely

¹ Read by title and synopsis at the meeting of the American Otological Society, July 19, 1893.



untenable hypothesis. The name is *unjust*, because Flourens in 1822, and Deleau in 1836, described aural vertigo more accurately than Ménière in 1861,¹ and Deleau came much nearer than any previous observer to the solution of the cause of most cases of aural vertigo in placing the origin *in lesions of the middle ear*.

Tympanic vertigo, due to lesions in the middle ear, is of frequent occurrence. It is often not recognized, especially by the general practitioner, as aural vertigo. It is not unusual for tympanic vertigo to be attributed to intestinal disturbance, or to "neurasthenia," instead of to an aural lesion. Hence, the diagnosis being erroneous at the outset, the treatment is wrong, and the patients do not recover.

True tympanic vertigo, due to a lesion in the middle ear, chiefly from chronic catarrh of the tympanic cavity, is paroxysmal in character, and attended with tinnitus and deafness in the affected ear. It is caused by the inward pressure exerted upon the labyrinthine fluid by the retracted and ankylosed ossicles. The foot-plate of the stapes is thus unduly pressed into the oval window, and there held by the force named, paroxysmally and for longer or shorter periods.

I have long maintained the tympanic or mechanical origin of most cases of aural vertigo, in opposition to the asserted neuropathic, or labyrinthine cause.²

¹ Gazette Médicale de Paris, September 21, 1861.

² "Aural Vertigo." Philadelphia Medical Times, June 3, 1882.

In chronic catarrh of the middle ear there must always be, sooner or later, a disturbed tension in the conductors of sound, whereby at times the membrana tympani and the three auditory bonelets are carried unduly inward, and exert a morbid pressure by means of the impacted stapes upon the fluid in the labyrinth. This irritation in the labyrinth being communicated to the motor filaments of the auditory nerve is reflected by them to the cerebellum, and disturbed equilibration is the result.

This morbid retraction of the auditory chain, and resultant cerebellar irritation, are not constant, but vary with the state of the general health and the condition of the catarrhal middle ear. Hence all true aural vertigo of tympano-mechanical origin is paroxysmal in form.

If the theory is correct that the vertigo in chronic catarrh of the middle ear is due to the retraction of the conductors of sound and mechanical pressure upon the labyrinthine fluid, then the surgical removal of such retraction and pressure ought to relieve tympanic vertigo.

No opportunity to test the truth of this theory offered itself until May, 1888. Then, being consulted by a former patient with chronic catarrh of the middle ear, for the relief of constant tinnitus, and oft-recurring attacks of *severe tympanic vertigo*, which had been superadded to her deafness in the left ear within the previous two years, and finding that the malleus had become adherent to the promontory, I resolved to do what, so far as I know, had never been done for the relief of aural vertigo of a mechanical or tympanic origin, viz.: to cut out

the membrana tympani and the malleus, in order to liberate the impacted stapes.

This case and the entire success attending the operation have been fully detailed in other places.¹ I would like to state here that the entire relief from tinnitus and vertigo, which followed immediately upon the operation five years ago, has continued to the present time. All the operations referred to in this paper were performed upon the etherized patient, the ear being illuminated by a six-volt electric lamp, held on the operator's forehead.

The operation of excision of the membrana tympani with the malleus was applied in four succeeding cases of chronic tympanic vertigo with entire relief in all of them.² However, as in all of the cases more or less inflammatory reaction followed this operation, I concluded that removal of the incus alone, or of the incus and stapes, the membrana tympani and the malleus being permitted to remain in position, would liberate the stapes and the compressed labyrinthine fluid, as well as, or perhaps better than, total excision of the membrana and the malleus, and probably would not be followed by inflammatory reaction. And the notes of the following cases will show that I was correct in my assumption.

The first case to which I would call attention was described in detail as Case V, in *THE MEDICAL NEWS*, of March 13, 1893, not as one in which tympanic vertigo was at all prominent, or in which the

¹ The Polyclinic, August, 1888; The American Journal of the Medical Sciences, February, 1889, and the Transactions of the American Otological Society, 1890.

² International Clinics, January, 1892.

operation was performed chiefly for the relief of that symptom. The prominent symptoms were dullness of hearing and annoying tinnitus, and to relieve these the operation of removal of the incus and stapes was undertaken. But as there had been some slight vertiginous attacks, and as the operation was successful in relieving the deafness and tinnitus, and preventing the recurrence of further attacks of even slight tympanic vertigo, it may be regarded in this instance as at least a prophylactic of pronounced tympanic vertigo.

The next case was described as Case VI, in THE MEDICAL NEWS of March 13, 1893.

This is the only case in the series in which the stapes was removed entirely. The result was so good—in fact, so much better than in some in which the stapes was only liberated or only its crura were removed, that I am inclined to think that in any case of tympanic vertigo in which liberation or partial removal of the stapes does not give as much relief as is desired, *puncture of the foot-plate* of the stapes, in order to relieve the labyrinthine tension, would be justifiable.

CASE VIII. *Removal of the left incus for aggravated chronic tympanic vertigo.*—Mrs. T. R. G., aged fifty-five, the wife of a physician, has had chronic catarrhal otitis media since childhood. The tinnitus has increased of late years, and she has been treated for years, by a prominent physician, for neurasthenia. Within a year or two marked tympanic vertigo has set in, and increased to *weekly* attacks, quite laying her up in bed when a paroxysm occurred. These attacks usually have come on in the house, sometimes in bed, but once lately the patient

was attacked while out driving. The attacks of vertigo were attended with increased tinnitus, nausea, and vomiting, without loss of consciousness, the face and forehead being bathed with cold sweat. There has never been any rational aural treatment in this case. The patient has been treated with purgatives and alteratives for "neurasthenia," and has grown steadily worse.

Examination of the left ear revealed a retracted membrana tympani, with signs of sclerosis of the drum-cavity. The incus and stapes were visible through the membrana. No catarrh of the nares or naso-pharynx. Tuning-fork heard *per ossa* in the affected ear. Loud words could be heard near the ear. The right ear is good, but said to be failing lately.

As the attacks of tympanic vertigo had now become so well marked, and so distressing, her husband had determined to seek relief for her by means of the removal of the force impacting the stapes in the oval window. Therefore, on June 7, 1893, the patient was etherized, and after excision of the posterior, superior quadrant of the membrana, the incus, though held tightly in place by synechiæ, was quickly removed. The stapes was found firmly and immovably fixed in the oval window, and could not be removed, its head being broken off in the endeavor.

There was no reaction in this case, and the patient went home, a hundred and fifty miles away, on the third day.

On June 25, three weeks after the operation, her husband wrote that "she has been getting on so well that we have some how failed to report to you of her general improvement. The first week after the operation she had several very *slight attacks* of vertigo, but they passed off very soon, and of late she has had no trouble whatever." She has been able to go about the house attending to her duties, without

the fear even of the hindrance previously experienced from the attacks of tympanic vertigo. The tinnitus became much less, and the hearing improved a little. But the great end had been attained, viz: the relief from the sickening and incapacitating tympanic vertigo.

On August 8, 1893, her husband wrote that there had been some attacks of slight vertigo since his last letter, but nothing severe. Before the operation the patient had been bed-ridden by the severity and duration of the vertigo. September 10th. The patient remains free from vertigo.

CASE IX. *Removal of the incus only.*—Sister —, a nun, twenty-five years old, has for several years suffered from tinnitus, deafness, and tympanic vertigo, due to sclerotic otitis media of the left ear, following a chronic purulent otitis media, which latter ceased years ago. There was a perforation of the posterior inferior quadrant, with calcareous patches in the upper posterior and upper anterior quadrants of the membrana. The tuning fork was heard well *per ossa*, and isolated words were heard *close* to the ear.

June 28, 1893, the patient was etherized, and the perforation enlarged and extended into the upper posterior quadrant, exposing the incus lying high up in the attic. The incus was then removed.

The next day the hearing for isolated words in ordinary tone was two feet, and for whispered words from eight to ten inches. The patient was not seen again until July 20, 1893, when she reported that there was no more tinnitus or "swimming in the head." There had been no return of these symptoms by September 1, 1893. The result in this ear has been so good that a similar operation is contemplated for the relief of dulness of hearing and tinnitus in the other, the better ear.

CASE X. *Resection of the long processes of both*

incudes for the relief of deafness, tinnitus, and severe chronic tympanic vertigo.—Mr. Charles C. T., aged thirty-one, of Baltimore, Md., has been affected with chronic catarrhal otitis media in the right ear for eight years, and in the left ear for four years. Within a year the tinnitus has become severe in both ears, and the hearing has failed in both, the left ear being a little better for hearing, however, than the right ear. In addition to these symptoms there had been superadded the tendency to attacks of tympanic vertigo, with temporary increase of tinnitus aurium in both ears at the time of the vertiginous paroxysms. So severe have the latter been as to require the patient to hold on to the nearest objects in the street to prevent him from falling. He has never vomited, however, in any of these attacks, but their severity and frequency have dispirited him, and prevented him from attending to his duties. For many months past the patient has been treated for an *asserted* catarrh of the nares, naso-pharynx, and throat, but the deafness, tinnitus, and vertigo have grown worse rather than better. Examination, June 18, 1893, revealed the membranæ tympanorum slightly retracted, the incudes and stapes visible through the membranes. The nares, naso-pharynx, and fauces were not affected.

July 21, 1893, the patient was etherized, and I endeavored to remove first the right, and then the left incus, after their exposure by exsection of the posterior, superior quadrants of the membranæ.

The right incus seemed firmly held in the attic, and when traction was made on the long process it quickly broke off. No further attempt to remove the body of the incus was made, as the object sought, viz. : severance of the retractive power of the incus from the stapes, had been attained. I met with the same experience on the left side.

The next day there was a slight reaction in both

ears, the tinnitus was no better, and the hearing was perhaps a little duller in the *left*, the better ear. There was no vertigo.

The patient returned to his home now, and reported to me in the course of four days that he had had no vertigo, but he felt worse in his ears, and that he had had some fugitive pains in them, with a little bleeding from one.

August 11th. The patient reported "a slight improvement in hearing in the left ear, but none in the right." The tinnitus still continued, but there had been "an entire absence of vertigo." The left ear had pained him "quite a good deal, and felt uncomfortable for the past day or two."

August 13th. The patient's sister, a physician, reported to me that there had been an "evident improvement in his hearing in the last ten days." Also a great improvement in his spirits.

September 3, 1893. The patient wrote that "the hearing in my left ear is much improved. I can hear conversation in ordinary tones about four feet, and if loud about ten feet. If the windows are open I can hear calls on the street. There is scarcely any roaring in the left ear, but in the right (the deafer ear), though diminished, there is quite a good deal. The hearing in the right ear seems to be about the same as before the operation." There has been no return of the attacks of tympanic vertigo. The perforations in the membranæ tympanorum persist.

It is noteworthy that in this case relief followed the severance of the retractive force by resection of only the long processes of the incudes; also, that most improvement in hearing and relief from the annoying tinnitus ensued in the better ear. This is due to the fact that greater mobility of the

stapes has persisted in this ear than in the worse ear, and hence liberation of the freer stapes and the passive motion exercised upon it by sound-waves, have greatly improved the function of hearing in this ear. The result in this respect should encourage the surgeon to operate on both ears, or upon the better rather than upon the worse ear alone, when both are so profoundly affected as in this case. Most important is it to observe the *progressive improvement* in this case, as in some of the others. This must be due to the passive motion exerted upon the ankylosed stapes by sound-waves, which fall upon it more freely than before the operation.

From all the ten cases we may conclude :

1. That removal of the retractive force of the sound conductors upon the stapes is the efficient means of relieving the tinnitus, deafness, and vertigo, due to the lesions of chronic catarrh of the middle ear.

2. That the removal of the retractive force upon the stapes can be accomplished efficiently and simply by removal of the incus alone, and even by resection of its long process.

3. That the improvement in these cases is due to the liberation of the stapes from the retractive power of the tensor tympani muscle, and the consequent unimpeded action of the stapedius muscle, which, relieved of the antagonism of the tensor tympani, tends all the more to draw the stapes from the oval window, thus aiding in the isolation and improved mobility of the bonelet, as well as in removing its undue pressure inward upon the labyrinthine fluid.

4. It would seem wiser, therefore, in most cases

of chronic catarrhal deafness, tinnitus, and vertigo, not to sever the stapedius tendon and remove the stapes, but to be content with removal of the incus only.

5. The progressive improvement in hearing noted in many instances, especially in Case X, must be due to the passive motion exerted upon the ankylosed stapes by sound-waves, which are enabled to reach this bonelet more freely after the removal of the incus.

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